

TECHNICAL EDUCATION IN GREAT BRITAIN

ON April 29 the National Union of Students held a conference in London at the Polytechnic, Regent Street, to discuss the recent Government report on technical education. The conference was attended by representatives from industry, local education authorities, the student associations in technical colleges, and the staffs of technical colleges. There were short opening addresses in each of the three sessions; but the major part of the time was devoted to discussion, which was lively and stimulating throughout. The morning session was opened by Mr. A. A. Part, Under-Secretary at the Ministry of Education, who spoke on "Action on the White Paper". He said that though the report in the White Paper made rather few specific proposals, it did envisage a wide extension of all advanced work in both full-time and part-time day courses at technical colleges, that is, all work above the standard of the Ordinary National Certificate or the Advanced Level of the General Certificate of Education; it also implied that, although a limited number of colleges selected from those with 75 per cent grant would be made into colleges of advanced technology, the total number of technologists studying at an advanced standard must be increased beyond the capacity of the establishments designated as colleges of advanced technology, and thus there would still require to be a number of colleges receiving 75 per cent grant which would mainly do advanced work.

One of the chief developments would be in the greater use of 'sandwich' courses. It is hoped that larger firms might pay the apprentices, whom they send on such courses, and that students from smaller firms might be helped by extra State scholarships and major county awards, all of which would in future be tenable at technical colleges doing advanced work. (It was not made clear whether this would apply only to colleges of advanced technology or to all colleges with 75 per cent grant.) Mr. Part said that, to find the extra personnel for the advanced courses, we must tap the large reservoir of talent among those who have left school before eighteen and that we must provide ways for these students to equip themselves for proceeding either to sandwich courses or Higher National Certificate courses, both by persuading parents to keep their children at school until they are eighteen and by encouraging a far greater liaison between schools, industry and technical colleges. The intention is to approve a large building programme: £15 million will be approved now, and in June a further £15 million for the session 1958-59. Local education authorities are responding well in sending in building schemes.

Mr. Part also emphasized the need for increasing the number of trained technicians, and in the discussion this point was emphasized by a speaker, who said that it was a mistake to 'hive' off the training of technicians from the major technical colleges. Another speaker said that technical secondary schools must be taken out of major technical colleges because this leads to the local residents thinking of the technical college as a boy's school and also prevents the atmosphere in the college from being that of an establishment for adult students. Mr. Part, in reply, promised that the schools would be moved out in the near future.

In the afternoon the conference was addressed by Sir Harold Roxbee-Cox, vice-president of the National Council for Technological Awards (the Hives Council). He said that the report of the Council, which is to be published very shortly, will suggest provision of an award of second-class honours degree standard to students who are successful in an advanced course approved by the Council, but that this approval implies that a course will be recognized only in a college which has a high general standard both in the quality of its staff, facilities for research and in social amenities for its students.

The U.S.S.R. is training three times as many technologists per thousand of population as Britain, and it is only because the British I.Q. (by which Sir Harold meant "inventiveness quotient") is, he believed, higher than that of most other countries, that our shortage of numbers is not more serious. He has made inquiries from industrial firms employing more than 50 per cent of the trained technologists in Britain, and from their replies he estimates that these firms would like to increase their numbers of technologists by one-third now; he believes that, in view of developments in the U.S.S.R. and the United States, there will ultimately be a much larger demand in Britain. For this reason, the expansion envisaged in the White Paper is not enough, and Sir Harold hopes the Government will accelerate and expand the facilities offered. He thought that in time those now taking external degrees at the technical colleges would be drawn into taking a course for a 'Hives' award, but the national need is to train more technologists in addition to those now taking external degrees in any technology.

Mr. Roland Oliver, student secretary of the National Union of Students, spoke on "Counter Balancing over Specialization". He stressed the necessity for retaining a balance between science and the arts in a school course and the advisability of allowing the student at a technical college more time during his course for private reading and meeting other students. Many speakers afterwards pressed that schools should not only give those taking science subjects at advanced level some training in the humanities, but should also give those taking arts subjects some training in science. These speakers felt that the proportion of headmasters and headmistresses with an arts training is far too large, and that this tends to make boys and girls follow an arts course rather than a science or modern course, and also to make for a lack of appreciation of the value of a scientific education and of the importance of the work of the major technical colleges.

The teaching at technical colleges came under heavy fire from some student representatives, who maintained that there was not enough lecturing, that the students were treated like schoolboys, and that the hours of class attendance were much too large and permitted of little private study. Some university student representatives said that the hours were just as long in many science and engineering faculties in the universities and that this was inevitable in view of the laboratory work required. One felt that the truth probably lay between these two groups of speakers and that there was room for some shortening of hours and some modification

of teaching methods, though not quite as much as some speakers proposed.

Students also maintained that the best way of liberalizing the education of a technical student is to combine the shortening of hours of class attendance with a great increase in 'union facilities'. It was pointed out how small are the union club rooms in most colleges compared with those in a university, giving as an example for comparison the new building of the University of London, and many speakers urged that the Ministry should insist that, in any approved scheme for the enlargement of a technical college, provision should be made for adequate rooms for student activities. One could not help being impressed by this demand, which would have the strong support of college authorities.

Dr. J. Topping, principal of Acton Technical College, who took the chair throughout the conference, said in his opening remarks that more had been written on technical education since the Second World War than on any other subject, and he hoped that we are now moving into an era of action. The present writer came away feeling that there was every hope that his optimism was justified. As Dr. Venables puts it in his recent book on technical education: "We shall make progress, so long as those, who believe that the next stage in technical education is an evolutionary process, realize that we have not all of geological time available in this rapidly changing world".

Mr. F. Copplestone, president of the National Union of Students, who thanked all the delegates for coming to the conference, said that it had been a success because of the contributions the delegates had made. This is true, but it is also true that this success could not have been achieved without the initiative of the National Union of Students, which is to be congratulated on providing this opportunity for all the partners in technical education to meet.

H. V. LOWRY

INSTITUTE FOR SCIENTIFIC RESEARCH IN CENTRAL AFRICA, BELGIAN CONGO REPORT FOR 1953

THE sixth annual report of the Institute for Scientific Research in Central Africa*, covering the year 1953, includes besides the report of the director, M. L. van den Berghe, brief reports from the presidents of the various scientific commissions and sections, lists of the sections, committees and commissions, with their membership, and a list of papers published during the year by members of the staff of the Institute and associated investigators; this last-mentioned list is supplemented by brief summaries of the papers. M. van den Berghe emphasizes the contributions which the work of the Institute has already made in the region of Belgian Central Africa in the field of physical and social anthropology, population statistics, the physics of high solar altitudes, biochemistry of foodstuffs and the experimental zoology of invertebrates, and refers particu-

larly to the participation of the Institute during 1953 in a number of scientific conferences in Africa. The second Anglo-Belgian seminar in the human sciences was held at Kampala during February 23-28, 1953, and a third conference was due to be held in 1955 at Astrida and Lwiro. The first Anglo-Belgian seminar on nutrition was also held at Kampala, during February 18-20, 1953, and was concerned particularly with the comparison and discussion of results obtained in the field of nutrition in Uganda and the Belgian Congo and with visits to laboratories and institutions in Uganda and the exchange of techniques. A second seminar was projected at Lwiro in 1955.

A meeting of experts nominated by the Scientific Council for Africa South of the Sahara for the co-ordination of social research in Africa south of the Sahara met at Kampala during February 28-March 2, 1953. The conference recommended the publication of a series of brief accounts of the existing organization for social research and the appointment of an inter-African scientific correspondent to visit the different institutions and survey the work in progress in this field. Two further conferences in 1955 covering demography and economics, psychology, linguistics, ethnography and sociology were also recommended. An international conference for the protection of the fauna and flora of Africa was held at Bakavu in October 1953, and also an Anglo-Belgian Government conference at Kigali on the tsetse fly, at which it was agreed that the Institute should immediately commence a detailed study in the region of Kakitumba, including research on both *Glossina* and trypanosomes and the determination of the fly-belt.

Construction of the central library of the Institute at Lwiro was begun in January 1953, and a new station at Ituri, two hours from Lwiro, designed for the general study of tropical forest at a medium altitude, was planned for construction in 1954. The work of the Institute during the year included studies of the entomology of Ruanda-Urundi and ethnological studies among the Balega, which were designed to provide a course of lectures for the Colonial School at Brussels on aspects of parentage, family life and political structure and associations among the Balega. Measurements of solar energy in the visible spectrum were continued, and the equipment at Lwiro was further extended. The systematic and ecological study of the molluscs of Tanganyika continued, and the fauna of the north-east border of Lake Tanganyika was also studied, while investigations were commenced on the birds of Lake Kivu, and particularly of the seasons of reproduction of birds living nearly on the equator. The electrophoretic method is being used for studying the proteinæmia among indigenous races in Ruanda-Urundi and also the evolution of serum proteins in infants up to two years of age. Special attention was given to the study of kwashiorkor at Kivu, and a study was commenced of the factors influencing the productivity of the African worker in the Belgian Congo and especially in agriculture. Linguistic studies included a systematic one at Tshumbe, in the region of Mondja, of the language known as Otatela. To facilitate the collection and collation of neuropathological material, autopsy services for neurological cases have been organized. Numerous observations have been made on nutritional disorders, tuberculosis and sickle-cell anæmia; and researches were continued on *G. morsitans* and the biotopes of *Culex sylvestres* and particularly *Aedes simpsoni*, the transmitter of 'jungle yellow fever' in

* Institut pour la Recherche Scientifique en Afrique Centrale. Sixième Rapport Annuel, 1953. Pp. 229 + 4 plates. (Brussels: Institut pour la Recherche Scientifique en Afrique Centrale, 1956.)